

APPENDIX 8 - AUXILIARY POWER UNITS FOR REDUCING IDLING EMISSIONS FROM HEAVY-DUTY VEHICLES

Below is additional information pertaining to the Auxiliary Power Units (APUs) for Reducing Emissions from Heavy-Duty Vehicles Category for AQMD's FY 2003 Moyer Program. All information in RFP #P2004-04 and this Appendix apply. For additional detail regarding this program category, refer to the California Air Resources Board's (CARB's) 2003 Moyer Program Guidelines¹. In the case of any conflict between CARB guidelines and AQMD criteria, the more stringent criteria will prevail. Also, it is the Applicant's responsibility to check with AQMD's Moyer Program web page for program clarifications, changes and updates. This page may be accessed by clicking the "Clean Air Technologies" link on AQMD's home page at www.aqmd.gov.

INTRODUCTION

Heavy-duty vehicles (HDVs) are utilized in line-haul service carrying goods across the state and throughout the nation. The majority of all HDVs are powered by diesel engines and it is not uncommon for a line-haul truck to accrue 100,000 miles, or more, annually. The engines in these vehicles also operate at idle conditions for a significant amount of time, usually to keep the engine and fuel warm, especially in cold weather, or to heat or cool the truck's cab/sleeper compartment. Since heavy-duty (HD) diesel engines do not operate at optimum efficiency at idle conditions, extended engine idling results in increased emissions and fuel consumption. Although technologies for reducing idling emissions from HD trucks are commercially available, relatively high initial costs have prevented these idling reduction strategies from being more widely utilized.

The AQMD's Moyer Program provides incentives to reduce emissions from truck idling by encouraging the purchase and installation of alternative idling reduction technologies. These technologies do not only reduce idling emissions from heavy-duty trucks, but can also result in fuel savings and reduced maintenance costs to truck operators, as detailed below.

APUs provide a cost-effective means to reduce idling emissions from HD diesel trucks. However, because of the attractive life-cycle cost of this technology, the Moyer Program cannot pay for the full cost of an APU. Fuel savings to the truck operator who purchases an APU offer a return on the investment that eventually offsets the initial capital cost of the APU. Thus, the role of this incentive program is to promote the introduction of the technology in the near term. The payback period and the amount of fuel savings depend on the total cost of the unit, actual idling hours, fuel prices, and maintenance costs. Therefore, a maximum amount

¹ Be sure to visit <http://www.arb.ca.gov/msprog/moyer/moyer.htm> for the latest approved ARB Moyer Program Guidelines.

of \$1,600 per diesel APU, and \$3,100 per alternative fuel or electric motor, is allowed in this project category.

PROGRAM GUIDELINES

Changes for 2003

Below are important changes to the APU category for 2003:

- A maximum amount of \$1,600 per diesel APU, and \$3,100 per alternative fuel or electric motor, is allowed in this project category. These limits have been revised for cost of living increases relative to those allowed in previous Program Guidelines.
- The cost-effectiveness threshold for the APU category was increased to \$13,600 per ton of NOx reduced and the capital recovery factor was reduced to 3 percent.
- Default idling emission factors for heavy heavy-duty diesel trucks have been revised in accordance with CARB's updated emission inventory model.

Project Eligibility Criteria

The following criteria are provided specifically for APUs that will be installed on a HD truck to reduce the truck's idling emissions. Other idling reduction strategies can be evaluated on a case-by-case basis. In general, APU projects that reduce emissions from HDVs shall meet the following criteria:

- Eligible projects must provide at least 15 percent NOx emission benefit compared to baseline idling NOx emissions.
- The engine used in the APU must meet current emission standards and be certified by the ARB for sale in California. Compliance with all applicable durability and warranty requirements is also required.
- An hour-meter must be installed with the APU to track operation. Operational data from this hour-meter must be provided to AQMD as part of the reporting requirements discussed below.
- The default load factor for the internal combustion (IC) engine used in an APU will be the maximum power rating of the engine, unless another load factor is proposed and supported by proper documentation.

- Funded projects must operate for a minimum of 5 years. Longer project lives may be approved by CARB and AQMD on a case-by-case basis.
- Emission benefits must be based on the vehicle's idling time that occurs in the South Coast Air Basin.
- The actual installation cost of the APU, including installation of an hour-meter, up to a maximum of \$1,600 per diesel APU installation, and a maximum of \$3,100 per alternative fuel, electric motor, or fuel cell APU installation may be funded, whichever is less.
- Projects must meet a cost-effectiveness criterion of \$13,600 per ton of NOx reduced, subject to the maximum funding limitations detailed above.
- NOx reductions obtained through this program must not be required by any existing regulations, memoranda of agreement/understanding, or other legally binding documents.

Evaluation Methodology

AQMD staff will evaluate all submitted proposals and make recommendations to the Governing Board for final selection of project(s) to be funded. Proposals will be evaluated based on the cost-effectiveness of NOx reduced on an equipment-by-equipment basis, as well as a project's "disproportionate impact" evaluation (discussed below). Be aware of the possibility that due to program priorities and/or funding limitations, project applicants may be offered only partial funding, and not all proposals that meet minimum cost-effectiveness criteria may be funded.

In compliance with AB 1390, Firebaugh, the FY 2003 Moyer Program requires that at least 50 percent of the funds be spent in areas that are disproportionately impacted by air pollution. CARB has issued broad goals and left the details of how to implement this requirement to each air agency. In the South Coast Air Quality Management District, the disproportionately impacted areas are defined by a weighted formula that includes poverty level, particulate matter (PM) exposure and toxic exposure. The process is described below:

1. All projects must qualify for the Moyer Program by meeting the cost-effectiveness limits established in the RFP.
2. All projects will be evaluated according to the following criteria to qualify for Disproportionate Impact funding:
 - a. Poverty Level: All projects in areas where at least 10 percent of the population falls below the Federal poverty level based on the year

2000 census data, will be eligible to be included in this category, and

- b. PM Exposure: All projects in areas with the highest 15 percent of PM concentration will be eligible to be ranked in this category. The highest 15 percent of PM concentration is 46 micrograms per cubic meter and above, on an annual average, or
- c. Toxic Exposure: All projects listed in the Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES II) report² as having a cancer risk of 1,000 in a million and above will be eligible to be ranked in this category.

Data for the poverty level and PM and toxic exposures were obtained from the U.S. Census, the 1998 AQMD monitoring data and Mates II study respectively.

- 3. Fifty percent of the \$12.3 million available for this RFP will be allocated among proposals located in disproportionately impacted areas. If the funding for disproportionately impacted areas is not exhausted with the outlined methodology, then staff will return to the Governing Board for direction. If funding requests exceed 50 percent of the total available funding, then all qualified projects will be ranked based on their disproportionate impact. Each project will be assigned a score that is comprised of 40 percent for poverty level, and 30 percent each for PM and toxic exposures. Proposals with the highest scores will receive funding until 50 percent of the total funding is allocated.

All the proposals not awarded under the fifty percent disproportionate impact funding analysis will then be ranked according to cost-effectiveness, with the most cost-effective project funded first and then in descending order for each funding category until the remainder of the Moyer Funds are exhausted. Some projects that exceed the cost-effectiveness ceiling may receive partial funding, depending on their rankings.

Eligible Costs

The actual installation cost of the APU, including installation of an hour-meter, up to a maximum of \$1,600 per diesel APU installation, and a maximum of \$3,100 per alternative fuel, electric motor, or fuel cell APU installation may be funded, whichever is less. Also, the cost of the hour-meter may be included in the project cost for purposes of determining an award. Of course, the overall program cost-

² Multiple Air Toxics Exposure Study in the South Coast Air Basin (MATES II), SCAQMD, March 2000.

effectiveness limit of \$13,600 per ton of NOx reduced applies, and may reduce funding awards further.

Reporting and Monitoring

All participants in the Moyer Program are required to keep appropriate records during the full life of the project (minimum of 5 years). Records must be retained and updated throughout the project life and made available for AQMD inspection. The AQMD may conduct periodic reviews of each project's operating records to ensure that the engine is operated as stated in the program application. Annual records must contain, at a minimum, actual hours of operation or estimated amount of fuel used per year. The type of records required to be maintained over the life of the project must be consistent with the calculation approach used, either one based on fuel consumption or hours of operation. Annual hours of operation are acceptable for an engine equipped with a non-reset hour-meter; otherwise fuel receipts must be provided to demonstrate fuel consumption. For electrification projects, the applicant must have documentation of payment to the local utility company for power installation.

PROJECT TYPES

Auxiliary Power Units

Auxiliary power units (APUs) are self-contained power generating devices, typically packaged with a small IC engine, of 20 hp or less, that can be coupled with a generator and heat exchanger to generate electricity and heat. APUs are usually installed on the truck chassis outside the truck cab to provide power for the truck's accessory loads and to keep the engine warm when the truck is parked. This allows the operator to refrain from idling the truck main engine. The extent of labor involved in the installation of an APU on the truck depends on the configuration of the truck engine and chassis and the plumbing of its heating/cooling system. Heating and cooling of the cab compartment are accomplished through either dedicated equipment supplied with the APU or through the truck's existing heating and cooling system. APUs are commercially available and meet most of the power needs of truck operators.

Direct-Fired Heaters

Direct-fired heaters for truck heating applications are devices that use the combustion heat of a small IC engine to provide heat directly to the truck's cab/sleeper area through the use of a small heat exchanger. Because it is designed to provide heat directly from a combustion flame, the heating efficiency of these units is higher than that obtained through the truck's engine due to reduced mechanical losses and fuel consumption. Two primary limitations of direct-fired heaters for this application are that they cannot provide cooling and

that they draw on the truck's battery power during operation. Direct-fired heater technologies continue to evolve, but they have not gained widespread commercial acceptance.

Thermal Storage/Direct-Fired Heaters

Thermal storage systems provide both heating and cooling for the cab/sleeper area. This technology uses the heat of transformation associated with material phase change to provide heating and cooling to the cab/sleeper area. However, the technology faces several drawbacks: 1) it cannot provide heat to the engine unless a direct-fired heater is also incorporated with the thermal storage system, 2) it cannot provide cooling at night unless the truck's air conditioner was used in the daytime, and 3) it uses the truck's battery power.

Truck Stop Electrification

Another strategy for reducing truck idling is electrification of truck stops or truck rest areas where trucks park. This strategy requires the installation of charging infrastructure at truck stops and rest areas and the retrofit of trucks with components such as engine block heater, fuel heater, and electric heater for cab/sleeper areas. Enabling technologies for an electrification strategy are commercially available. In addition, new and improved technologies are continually developing that may offer significant emission reduction benefit. Currently, these options for cab heating/cooling, electricity, and telephone and internet service, are less intrusive and can be used by any truck with the use of a window connection.

EMISSION REDUCTION AND COST-EFFECTIVENESS

Emission Standards and Default Factors

For the purpose of calculating emission reduction benefits for the CMP, idling emission rates for HD diesel trucks from CARB's inventory model shall be used. Currently, commercially available technology for reducing truck idling emissions makes use of a small off-road engine as the power unit for supplying heating and cooling needs to the truck/cab and, in some cases, electricity to power the truck accessory loads. In these cases, the emission level for the replacement engine corresponds to the emission standards that govern the off-road engine. Table 8.1 lists the existing and future emission standards for small off-road diesel engines that are likely to be employed in APU idling reduction devices. The information is extracted from Table 2.2 in Appendix 2 – Off-Road Equipment, which provides the applicable emission standards for off-road engines.

**Table 8.1 – Emission Standards for 2000 -2004 Model Year Off-Road
Compression Ignition Engines rated at 0 – 37 kW (0 - 50 hp)**

Pollutants	Power Rating < 8 kW (11 hp)	Power Rating 8 < kW<19 (11<hp<25)	Power Rating 19 < kW<37 (25<hp<50)
NOx+NMHC	10.5 g/kW-hr (7.8 g/bhp-hr)	9.5 g/kW-hr (7.1 g/bhp-hr)	9.5 g/kW-hr (7.1 g/bhp-hr)
PM	1.0 g/kW-hr (0.75 g/bhp-hr)	0.8 g/kW-hr (0.6 g/bhp-hr)	0.8 g/kW-hr (0.6 g/bhp-hr)

Emission Reduction Calculation Discussion

The emission reduction benefit represents the difference in the emission level of a baseline idling engine and the APU. The emission level is calculated by multiplying an emission factor by an activity level, and, for the APU, by a load factor.

Since emission standards for small off-road CI engines are established in terms of NOx+NMHC, the NOx *fraction* must be determined. On average, the NOx fraction in the NOx+NMHC certified emission values from diesel engines range from 90 to 98 percent. In contrast, for natural gas-fueled engines, the NOx fraction is approximately 80 percent of the combined NOx+NMHC certified emission values. To determine NOx emissions, the certification NOx+NMHC emission standard for an engine is multiplied by the appropriate NOx fraction provided in Table 8.2 below³.

Table 8.2 – NOx Fraction Default Values

Diesel Engines	Alternative Fuel Engines
0.95	0.80

NOx idling emission factors are included in the emission inventory models, which accounts for excess in-use NOx emissions from engines under the settlement agreement. The average idling NOx emission factors for heavy heavy-duty diesel (HHDD) trucks (33,000 + lbs GVWR) are 81 g/hr of NOx emissions and 1.0 g/hr of PM emissions according to ARB's updated emission inventory model. These values, summarized in Table 8.3, are to be used as default emission factors for calculating diesel truck idling emissions for the purpose of the Carl Moyer Program.

³ NOx fractions should only be applied the combined NOx + HC emission standards, in order to eliminate the HC portion of the emissions (for NOx emission reduction purposes).

Table 8.3 – Default Idling Emission Factors for HHDD Trucks

NOx (g/hr)	PM (g/hr)
81	1.0

Cost-Effectiveness Calculation Discussion

For APU projects, only the actual installation cost of an eligible new APU is eligible for CMP funding. The maximum installation cost funded by the CMP shall not exceed \$1,600 for diesel powered APUs and \$3,100 for alternative fuel APUs⁴. In addition, the project must meet the \$13,600 per ton of NOx reduced cost-effectiveness criterion. Only the installation cost of the APU is to be used in the cost-effectiveness calculation. That amount is to be amortized over the expected project life (at least five years) and with a discount rate of 3 percent. The amortization formula (given below) yields a capital recovery factor (CRF), which, when multiplied by the initial capital cost, gives the annual cost of a project over its expected lifetime. CRFs are listed in Table 8.4 below.

$$\text{Capital Recovery Factor (CRF)} = [(1 + i)^n (i)] / [(1 + i)^n - 1]$$

where, i = discount rate (5%)
 n = project life (at least five years)

**Table 8.4 – Capital Recovery Factors (CRF) for Various Project Lives
At 3 Percent Discount Rate.**

Project Life	CRF
5	0.218
6	0.185
7	0.161
8	0.142
9	0.128
10	0.117
11	0.108
12	0.100
13	0.094
14	0.089
15	0.084
16	0.080
17	0.076
18	0.073
19	0.070
20	0.067

⁴ This limit includes the cost of the hour-meter.

Example – APU Project (Calculations based on Fuel Consumption and Idling Hours)

A truck operator proposes to purchase an APU, powered by a certified 7.5 kilowatt (10 horsepower) engine, to be installed on a heavy-duty truck to reduce its engine idling hours. This vehicle idles 1,000 hours per year in the South Coast Air Basin. The load factor for the APU is documented to be 90 percent of rated power and the APU would substitute for up to 80 percent of the truck's idling time. The installation cost of the APU on the truck is \$1,400.

Emission Reduction Calculation

Baseline Truck NO_x Idling Emission Factor:	81 g/hr (from Table 8.3)
APU NO_x+NMHC Emission Standard:	10.5 g/kW-hr (from Table 8.1)
APU NO_x Emissions (Apply Table 8.2 Fraction):	$0.95 \times 10.5 = 10 \text{ g/kW-hr}$
Annual Idling Hours in California:	1,000 hours
Power Rating:	7.5 kW
Load Factor:	90%
APU Idling Substitution Rate:	80%
Conversion factor:	1 ton = 907,200g

Since 80 percent of idling load is attributable to the APU, 20 percent of actual idling load is still carried out by the truck engine. Thus, the hourly NO_x emission reduction is:

$$81 \text{ g/hr} - [(0.20)(81 \text{ g/hr}) + (0.80)(10 \text{ g/kW-hr})(7.5 \text{ kW})(0.90)] = 10.8 \text{ g/hr}$$

Annual emissions reduction is:

$$10.8 \text{ g/hr} \times 1000 \text{ hours / year} \times \text{ton} / 907,200 \text{ g} = \mathbf{0.012 \text{ tons/year NO}_x \text{ emissions}}$$

Cost and Cost-Effectiveness Calculations

The annualized cost is based on the installation cost of the APU, the expected life of the project (7 years), and the interest rate (3 percent) used to amortize the project cost over the project life. The maximum amount that can be funded by the Moyer Program is determined as follows:

APU Capital Cost⁵	= \$6,000	
APU Installation Cost	= \$1,400	
Moyer Amount Requested	= \$1,400	
Capital Recovery	= 0.161 (from Table 8.4)	
Annualized Cost	= $(0.161)(\$1,400)$	= \$225/yr
Cost-Effectiveness	= $(\$225/\text{year}) / (0.012 \text{ tons/year})$	= \$18,750/ton

The cost-effectiveness for the example is more than the maximum allowable \$13,600 per ton of NO_x reduced. In order to meet the \$13,600 per ton cost-

⁵ Recall that only the installation cost of the APU is eligible for Moyer Program funding. The APU capital cost is *not* eligible.

effectiveness requirement, this project would only qualify for a portion of the installation cost, to a maximum amount of approximately \$1,014.

This amount is determined by multiplying the maximum allowable cost-effectiveness by the estimated annual emission reductions and dividing by the capital recovery factor: $(\$13,600 \times 0.012) / (0.161) = \$1,014$.

<p align="center">Carl Moyer Memorial Air Standards Attainment Program AUXILIARY POWER UNITS (APUs) FOR REDUCING IDLING EMISSIONS FROM HEAVY-DUTY VEHICLES APPLICATION</p>

Please provide all information requested regarding your proposed purchase and application. Additional information may be requested during the review process. Applicant acknowledges that award of cash incentive is subject to AQMD approval and must meet the minimum eligibility criteria within the project category. **Please Print or Type**

A. APPLICANT INFORMATION

Organization:		
Contact name:		
Person with contract signing authority:		
Street/mailling address:		
City:	State:	Zip code:
Project Location Address:		
City:	State:	Zip code:
Phone: ()	Fax: ()	
E-mail:		
Geographic area served by organization (i.e., project location):		
Geographic area to be served by APU (if different than above):		

I hereby certify that all information provided in this application is true and correct.

Number and Type of APUs Requested for Funding:	Total Funding Request:
Printed Name of Responsible Party:	Title:
Signature of Responsible Party:	Date:

CHECK LIST FOR APPLICATION ITEMS

Be sure the following items are included with your application submittal. Check each applicable item below to indicate inclusion of material.

- ☐ Completed Application
- ☐ Checklist for Application Items and Eligibility Criteria
- ☐ Project cost information (as described in the RFP), which shall include vendor quotes or other documentation substantiating cost data provided in Application.
- ☐ Contracting Statements (Applications are not eligible without this form.)
 - ☐ Statement of Understanding for Work Statement and Deliverables
 - ☐ Conflict of Interest Statement (as described in the RFP)
 - ☐ Third-Party Application Submittal Authorization (Only required if application is submitted by someone other than the vehicle/equipment owner.)
- ☐ Letter of Agreement from Fuel Provider (if applicable)
- ☐ Co-funding information attachments to Section E.3 (if applicable)
- ☐ Certifications and Representations
- ☐ Other (attach explanation)

If you have any questions regarding the application process for Auxiliary Power Units for Reducing Idling Emissions from Heavy-Duty Vehicles, please contact Connie Day, Science & Technology Advancement at (909) 396-3055 by phone, or (909) 396-3252 by fax.

REMINDER

Due Date - The proposer shall submit **six (6) complete copies of the proposal** in a sealed envelope, plainly marked in the upper left-hand corner with the name and address of the proposer and the words "Request for Proposals #P2004-04" by Friday, October 10, 2003. Postmarks are not accepted. **Faxed or e-mailed proposals will not be accepted.** Proposals must be directed to:

Procurement Unit
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, CA 91765

CONTRACTING STATEMENTS (All Are Required)

1. Statement of Understanding for Work Statement and Deliverables

In order to minimize the effort required to complete a Moyer Program Application, AQMD does not require submittal of a Work Statement or Deliverables Summary with the Application. However, the undersigned confirms full understanding that, if awarded funding under the Carl Moyer Program, development and submittal of the detailed work statement, with deliverables and schedule, is a requirement of the contracting process. Recommended projects will not receive funding without these documents. Full details of the Work Statement and Deliverables requirements are detailed in RFP #P2004-04. In addition, Baseline and Reduced Emission Vehicle Serial/VIN information must be provided at contract start. By signing below, the applicant acknowledges these requirements.

2. Conflict of Interest Statement

Please address any potential conflicts of interest with other clients affected by actions performed by the firm on behalf of the AQMD in the form of a Conflict of Interest Statement. Although the proposer will not be automatically disqualified by reason of work performed for such firms, the AQMD reserves the right to consider the nature and extent of such work in evaluating the proposal. Conflicts of interest will be screened on a case-by-case basis by the AQMD District Counsel's Office. Conflict of interest provisions of the state law, including the Political Reform Act, may apply to work performed pursuant to this contract. Please provide a Conflict of Interest Statement below. If additional room is necessary, please attach extra pages to this sheet.

3. Third-Party Application (Circle One: Applicable Not Applicable)

Applicants who are submitting on behalf of a vehicle/equipment owner must provide authorization from the vehicle/equipment owner to act on their behalf for this application process. This authorization shall be provided in the form of a "Letter of Exclusive Authorization", to be attached to this sheet. In addition, the vehicle/equipment owner shall enter into a contract with its authorized applicant, who will sign a contract with AQMD for fulfilling all contract obligations.

Organization:	
Printed Name of Responsible Party:	Title:
Signature of Responsible Party:	Date:

CHECK LIST FOR ELIGIBILITY CRITERIA

Please check each applicable box below to indicate eligibility of proposed APU project.

- ☐ The purchase and/or amount of emission reduction is not required by any local, state, or federal rule or regulation, MOU or MOA, or used to comply with any such rule, regulation, or agreement.
- ☐ Seventy-five percent or more of the APU or system operation will be within the boundaries of the AQMD for at least five (5) years from the date the vehicle is placed into service with the new technology.
- ☐ Shows at least 15 percent reduction in NOx emissions from heavy-duty diesel truck baseline idling emissions and no significant increase in PM emissions.
- ☐ The engine used in the APU must be equipped with an hour-meter. The cost of the hour-meter may be included in the project cost, as long as the maximum limit is not exceeded.
- ☐ Engines used in the auxiliary power units must meet current emission standards, must be certified by the CARB for sale in California and must comply with applicable durability and warranty requirements.

APUS FOR HEAVY-DUTY VEHICLE IDLE EMISSION REDUCTIONS APPLICATION

Please provide all information requested regarding your proposed purchase and application. Additional information may be requested during the review process. Applicant acknowledges that award of cash incentive is subject to AQMD approval and must meet the minimum eligibility criteria within the project category. The applicability of each of the following questions depends upon the project type; please answer all that apply.

B. INFORMATION ABOUT EACH APU/HEAVY-DUTY VEHICLE PAIR

1. Primary function of vehicle (e.g., line haul, etc.):	
2. Gross Vehicle Weight Rating (GVWR):	
3. Installation Cost of each APU that meets current CARB standards:	
4. Number of APUs to be installed:	
5. Total Grant Request:	
6. Annual hours at idle per vehicle for Baseline:	
7. Percent idle operation within AQMD boundaries:	
8. Is there any seasonality to the use of the APU? If Yes, please explain:	
9. Baseline Fuel type:	
10. APU Fuel type:	
11. Baseline Engine Make/Model:	
12. APU Engine Make/Model:	
13. Baseline Model year:	
14. APU Model year:	
15. Baseline Horsepower:	
16. APU Horsepower:	

17. Baseline NOx emission level:	
18. Baseline PM ⁶ emission level:	
19. Certified NOx emission level (g/kW-hr) for APU:	
20. Certified PM emission level (g/bhp-hr) for APU:	
21. Estimated APU life:	
22. Estimated replacement schedule:	
23. Proposed Project Life for Cost-Effectiveness Calculations. See Program Guidelines for more information. (minimum is five years)	
24. Baseline Serial/VIN to be provided at contract start.	
25. APU Serial Number to be provided at contract start.	

C. GENERAL INFORMATION ABOUT THE APU MANUFACTURER/DEALER FOR HEAVY-DUTY VEHICLE WITH A NEW APU

APU Manufacture/Dealer:	
Street address:	
City:	State:
Phone: ()	Fax: ()
Contact name:	

D. GENERAL INFORMATION ABOUT THE APU INSTALLER (if different from above).

APU installer:
Street address:

⁶ PM emission factors are available in RFP #P2004-04 in the Particulate Matter Information Section.

City:	State:
Phone: ()	Fax: ()
Contact name:	

E. OTHER INFORMATION

1. Maintenance

Describe your maintenance facility and practices, including any training regarding the low-emission APU technology.

2. Refueling Information (if APU is alternatively fueled)

Describe how and where the APU will be refueled (e.g. on-site, existing facility, mobile/skid mounted equipment, etc.) Attach written verification of access to refueling facility from fuel provider if public fueling is not the primary alternative fuel source.

3. Co-Funding Information

Describe your funding sources for this project. At a minimum, this will include your company or agency's own budget for this project.